



Role of *Orvosi Hetilap* in the development of Hungarian gastroenterology

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Abstract

AIM: To analyze the contribution of *Orvosi Hetilap* (Hungarian Medical Journal) to the field of gastroenterology.

METHODS: All issues of the journal between 1857 and 2008 and identified original articles and reviews dealing with gastroenterology were reviewed. The rate of publications, the thematic distribution and foreign sources of knowledge were assessed. The dates that major achievements in gastroenterology were introduced in Hungary were compared to those dates in Western medicine.

RESULTS: A total of 4799 original/research articles on gastroenterology were published, which represents 11.1% of the total publications. Thematic rankings showed that liver and biliary diseases represented 20.36% of the total, followed by gastric diseases (9.35%) and surgery (8.77%). A total of 268 foreign journals were reviewed: 50.9% were German, 30.4% English, 12.1% French and only 6.6% were in other languages. The major achievements of gastroenterology were introduced with varying delays compared to Western countries.

CONCLUSION: *Orvosi Hetilap* has made a large contribution to the development of Hungarian gastroenterol-

ogy. The high proportion of gastroenterology studies underlines the importance of digestive diseases in public health.

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Key words: Content analysis; Gastroenterology; Hepatology; *Orvosi Hetilap*; Scientometrics

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INTRODUCTION

Nineteenth century Europe witnessed the publication of national medical journals. In Hungary, *Orvosi Hetilap* (*OH*; Hungarian Medical Journal) was first published in 1857, thus making it one of the first medical journals worldwide (Table 1). The importance of the journal in the development of Hungarian medical science and medical language is unrivalled, a fact that has been recognized many times. Much less is known, however, about the role of *OH* in the development of special fields, such as Hungarian gastroenterology. Medical historians divide the past 150 years into six periods according to the editors-in-chief of *OH* (Table 2)^[1]. Most of the editors were eminent figures in Hungarian medicine, and were quoted in foreign textbooks of medical history. To the best of my knowledge, this is the first complete content analysis of a medical journal in the field of gastroenterology.

The aim of the study was to track the timeline and make a thematic analysis of the papers dealing with diseases of the gastrointestinal tract, as published in *OH* between 1857 and 2008.

Table 1 Publishing timeline of the national medical journals

| | |
|---|-------------------|
| 1798: <i>Journal de Médecine</i> | Paris |
| 1809: <i>Journal of the Royal Society of Medicine</i> | London |
| 1812: <i>New England Journal of Medicine</i> | Boston |
| 1823: <i>The Lancet</i> | London |
| 1840: <i>British Medical Journal</i> | London |
| 1850: <i>Wiener Medizinische Wochenschrift</i> | Vienna |
| 1854: <i>Nederlander Tijdschrift der Geeneskunde</i> | Amsterdam-Utrecht |
| 1857: <i>Orvosi Hetilap</i> | Budapest |
| 1875: <i>Deutsche Medizinische Wochenschrift</i> | Stuttgart |
| 1883: <i>Journal of American Medical Association</i> | Chicago |
| 1893: <i>La Presse Médicale</i> | Paris |

Table 2 Editorial periods of *OH*

| Period | Editor-in-chief | Specialty | Duration (yr) |
|-----------|-----------------------------|----------------------------------|---------------|
| 1857-1888 | L. Markusovszky (1815-1893) | Public health | 32 |
| 1889-1905 | E. Hőgyes (1847-1906) | Bacteriologist, pharmacologist | 16 |
| 1905-1922 | M. Lenhossék (1863-1937) | Anatomist | 17 |
| 1923-1944 | Z. Vámosy (1868-1953) | Pharmacologist | 21 |
| 1948-1989 | T. Trencséni (1907-1996) | Internist | 41 |
| 1989-2008 | J. Fehér | Gastroenterologist, hepatologist | 20 |

OH: *Orvosi Hetilap*.

Table 3 Rate of gastroenterology publications in *OH* between 1857 and 2008 *n* (%)

| Editorial period | Total original articles | Gastroenterology articles | Total journal reviews | Gastroenterology article reviews |
|------------------|-------------------------|---------------------------|-----------------------|----------------------------------|
| 1857-1888 | 3416 | 312 (9.1) | 1386 | 126 (9.0) |
| 1888-1904 | 2102 | 143 (6.8) | 435 | 39 (8.9) |
| 1905-1922 | 2906 | 406 (13.9) | 7332 | 658 (8.9) |
| 1923-1944 | 7757 | 696 (8.9) | 11586 | 937 (8.0) |
| 1948-1989 | 19583 | 2175 (11.1) | 31489 | 3965 (12.5) |
| 1989-2008 | 7682 | 1067 (13.8) | 19575 | 1698 (8.6) |
| Total No. | 43446 | 4799 (11.1) | 71803 | 7423 (10.3) |

MATERIALS AND METHODS

I manually reviewed the journal volumes between 1857 and 2008. The full papers (both original research and reviews) as well as foreign journal article reviews were identified and classified according to their subjects and origin. All gastrointestinal, liver, biliary tract and pancreatic diseases were included. Articles on epidemics (cholera and typhus) that involved the digestive tract were excluded, being more the subject of epidemiology and microbiology, as considered by medical historians^[1]. The thematic analysis of the articles and journal reviews was performed using specific key words that occurred in the titles. The data were entered into an Excel database. The differences between the editorial periods were assessed using analysis of variance and the Kruskal-Wallis test, with a significance level of $P = 0.05$. The statistical work was performed using Statsoft Inc. version 9.0 software

Table 4 Thematic breakdown of full papers published in *OH* between 1857 and 2008¹ *n* (%)

| Subject | Articles |
|------------------------------------|-------------|
| Anatomy | 18 (0.30) |
| Pathology | 121 (2.02) |
| Physiology | 132 (2.20) |
| Esophagus | 194 (3.24) |
| Stomach | 559 (9.65) |
| Small bowel | 298 (4.98) |
| Appendix | 93 (1.55) |
| Large bowel | 268 (4.63) |
| Liver | 871 (14.57) |
| Biliary tract | 346 (5.79) |
| Pancreas | 354 (5.92) |
| Peritoneum | 102 (1.70) |
| Tumors | 195 (3.26) |
| Surgery | 524 (8.92) |
| Radiology | 165 (2.76) |
| Endoscopy | 246 (4.11) |
| Ultrasound | 69 (1.25) |
| Pediatrics | 185 (3.09) |
| Laboratory medicine | 145 (2.42) |
| Peptic ulcer | 189 (3.16) |
| Inflammatory bowel diseases | 102 (1.70) |
| Viral hepatitis | 219 (3.96) |
| Infectious diseases (non-epidemic) | 200 (3.34) |
| Laparoscopic surgery | 27 (0.45) |
| Transplantation | 39 (0.67) |
| Genetics | 61 (1.02) |
| General topics | 252 (4.28) |
| Total | 5974 (100) |

¹Some articles are included more than once, based on keywords in the title.

(Tulsa, OK, USA). The dates when some major achievements in gastroenterology were introduced in Hungary were compared to those for Western medicine.

RESULTS

General data

The volume of *OH* gradually increased from about 400 pages a year at the outset to 800 pages at the turn of the century, before increasing further. During World Wars I and II, both the extent and the number of publications decreased. Between 1944 and 1948, the publication of *OH* was interrupted because of the post-war economic depression (mainly due to lack of paper and printing facilities). After 1948, the volume averaged out at 2469 pages/year, which reflected the increasing number of original articles, journals and book reviews.

Full papers (original research and reviews)

A total of 43446 papers were published during the period studied (Table 3). While the editorial periods were unequal, the number of papers/year was calculated and it increased from 36 (1857-1904) to 64 (1905-1922) ($P = 0.0002$), before changing to 60 (1923-1944) ($P = 0.46$), 89 (1948-1989) ($P = 0.0001$) and 53 (1989-2008) ($P = 0.48$). For the whole period, gastroenterology articles represented 11.1% (6.8-13.9) of the total number of papers published in *OH*. The thematic breakdown of full papers on gastroenterology is shown in Table 4.

Table 5 Introduction of some major gastroenterology achievements in Western countries and Hungary^[2-6]

| Achievement | International application (year, author, location) | Hungarian application (year, author, location) |
|---|--|--|
| Rigid gastroscopy | 1868 (A. Kussmaul, Freiburg) | 1902 (J. Zimmermann, Budapest) |
| Gastric resection | 1880 (L. Rydiger, Vienna) | 1900 (M. Herczel, Budapest) |
| Radiography | 1895 (K. Roentgen, Würzburg) | 1896 (J. Klupathy, Budapest) |
| Cholecystectomy | 1881 (C. Langenbuch, Berlin) | 1889 (D. Velits, Budapest) |
| Liver biopsy | 1938 (I. Silverman, New York) | 1948 (L. Friedrich, Budapest) |
| Vagotomy | 1943 (L. Dragstedt, Chicago) | 1948 (E. Hedri, Budapest) |
| B-mode abdominal ultrasound | 1957 (I. McDonald, London) | 1973 (Á. Szebeni, Budapest) |
| Fiberoptic gastroscopy | 1958 (B. Hirschowitz, Birmingham, USA) | 1965 (T. Jávör, Debrecen) |
| Fiberoptic colonoscopy | 1970 (F. Matsunaga, Tokyo) | 1972 (L. Simon, Jászberény) |
| Endoscopic retrograde cholangio-pancreatography | 1970 (I. Oi, Tokyo) | 1971 (L. Sáfrány, Budapest) |
| Endoscopic sphincterotomy | 1973 (M. Classen, Munich) | 1976 (J. Papp, Budapest) |
| Liver transplantation | 1967 (T. Starzl, Denver) | 1995 (F. Perner, Budapest) |
| Laparoscopic cholecystectomy | 1985 (T. Mühe, Bobelein) | 1990 (I. Kiss, Pécs) |
| Capsule endoscopy | 2000 (P. Swain, London) | 2002 (I. Rác, Győr) |

Table 6 Profile of foreign journal reviews in *OH* between 1857 and 2008

| Editorial period | No. of articles reviewed | No. of journals | English (%) | German (%) | French (%) | Other Languages (%) |
|------------------|--------------------------|-----------------|-------------|------------|------------|---------------------|
| 1857-1888 | 211 | 86 | 17.9 | 52.5 | 15.9 | 13.2 |
| 1888-1904 | 381 | 113 | 12.6 | 64.5 | 17.7 | 5.2 |
| 1905-1922 | 658 | 112 | 15.6 | 62.2 | 14.6 | 7.6 |
| 1922-1944 | 936 | 121 | 19.6 | 57.1 | 16.9 | 6.4 |
| 1948-1989 | 3965 | 178 | 52.4 | 38.4 | 2.9 | 6.3 |
| 1989-2008 | 1698 | 113 | 64.4 | 31.0 | 2.9 | 0.9 |
| Total | 7849 | 268 | 30.4 | 50.9 | 12.1 | 6.6 |

Table 7 Ranking of core journals reviewed in *OH* between 1857 and 2008 *n* (%)

| Journal | Articles reviewed |
|--|-------------------|
| <i>Deutsche Medizinische Wochenschrift</i> | 1147 (31.2) |
| <i>Lancet</i> | 584 (15.9) |
| <i>British Medical Journal</i> | 410 (11.2) |
| <i>New England Journal of Medicine</i> | 313 (8.5) |
| <i>American Journal of Roentgenology</i> | 263 (7.1) |
| <i>Zentralblatt für Chirurgie</i> | 227 (6.1) |
| <i>Radiology</i> | 204 (5.5) |
| <i>Schweizerische Medizinische Wochenschrift</i> | 194 (5.2) |
| <i>Journal of American Medical Association</i> | 167 (4.5) |
| <i>Münchener Medizinische Wochenschrift</i> | 157 (4.2) |
| Total | 3666 (100) |

The dates when some major achievements in gastroenterology were first introduced in Hungary were compared with their first application in Western countries (Table 5)^[2-7].

Journal article reviews

Foreign medical journal reviews appeared in the pages of *OH* from the very beginning. Two hundred and sixty-eight different journals were reviewed. Between 1948 and 1959, however, their publication was interrupted for political reasons. The number and language breakdown of the journals in the editorial periods are given in Table 6.

The 10 most reviewed core journals are listed in Table 7. Overall, 3666 articles were reviewed in these journals, which represented 9.7% of the total reviews. The six English journals (60%) had 1941 articles reviewed (52.5%), while the four German journals had 1725 articles reviewed (47.5%).

DISCUSSION

During the 150 years of its publication, *OH* has covered all aspects of developing gastroenterology, from basic sciences (anatomy, physiology and pathology) to the latest achievements (abdominal imaging, laparoscopic surgery, transplantation and genetics) (Table 5). Published every week, it became the main source of professional knowledge for Hungarian physicians. The 11.7% ratio of papers dealing with diseases of the gastrointestinal tract underlines their importance in public health. Diseases of the liver and biliary tract (20.36%) and the stomach (9.35%) (especially peptic ulcers, 3.16%) were studied in most detail, although there were considerable fluctuations in the publication rates. Content analysis revealed that milestone developments of gastroenterology, as quoted, mentioned or even canonized by leading historians^[3-8], were introduced in Hungary with varying degrees of delay.

A large variety of foreign journals were reviewed. An analysis of journal reviews reveals that until the 1960s, German literature was the main source of information. The reasons for this are rooted in history, given that the country was part of the Austro-Hungarian monarchy. From the 1960s onwards, British and American journals gradually became the dominant source of information until the dawn of the internet. Even so, the German weekly *Deutsche Medizinische Wochenschrift* was and remains the most frequently reviewed journal. For a closer look at the foreign sources, it would have been better to conduct a citation analysis of the full articles. However, accurate reference lists only appeared after the 1920s. Until then, references were mentioned only as footnotes, indi-

cating the name of the authors; therefore, the impact of major advances and seminal articles on the Hungarian literature cannot be calculated.

In spite of its longevity and indexing in Medline/PubMed, Index Medicus, Embase, Index Copernicus and Google Scholar, *OH* has not been assigned an impact factor. To overcome this, the current Editor-in-Chief, J. Fehér, introduced a 2-monthly English version of *OH* called the *Hungarian Medical Journal*, which has published selected articles of the parent journal since 2007. Another alternative would be the bilingual (Hungarian-English) publication of the high-quality articles. *OH* has been accessible on the internet (<http://www.akademiaikiado.hu>) since 2008.

The complete archive of *OH* is available in just a few university and hospital libraries. These collections have not benefited from the passing of time. In the future, the digitalization of the journal is vital to save its valuable scientific content for future generations.

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COMMENTS

Background

The development of a medical specialty can be followed by the analysis of articles, journals and book reviews published over time in a given field.

Innovations and breakthroughs

The paper is believed to be the first content analysis of the complete edition of a time-honored medical journal, *Orvosi Hetilap* (Hungarian Medical Journal; 1857-2008).

Applications

The author overviews the development of gastroenterology in Hungary over 150 years by analyzing and classifying the original articles, journal and book reviews in the field of gastroenterology, covering both basic (anatomy, pathology and physiology) and applied sciences (esophageal, gastric, intestinal, liver and biliary diseases, and diagnostic procedures), with an emphasis on the main achievements as they have occurred in the literature.

Peer review

This is an interesting historical review of 150 years of gastroenterology articles published in a weekly Hungarian medical journal.

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